

WHAT IS CLAIMED IS:

1. A metal halide lamp, comprising:
 - a discharge container including a discharge space and sealing sections formed at both edges of the discharge space;
 - a pair of electrodes arranged to face each other within the discharge space and held in the sealing sections; and
 - a discharge medium sealed in the discharge container, containing a light-emitting material formed of a metal halide and a rare gas, and essentially free from mercury,
- 10 wherein the amount of water contained in the metal halide in the extinguishing stage of the metal halide lamp is not larger than 50 ppm.
- 15 2. A metal halide lamp according to claim 1, wherein the metal halide includes at least a halide of zinc.
- 20 3. A metal halide lamp according to claim 1, wherein raw material of the metal halide having a water content not higher than 100 ppm is sealed in the discharge space.
- 25 4. A metal halide lamp according to claim 3, wherein a vacuum heat treatment is applied to the raw material of the metal halide.
5. A metal halide lamp according to claim 3, wherein a heat treatment is applied to the raw material

of the metal halide under an inert gas atmosphere.

6. A metal halide lamp according to claim 1,
wherein the metal halide contains an excessively large
amount of the metal component relative to the
5 stoichiometric amount.

7. A metal halide lamp according to claim 1,
wherein the light-emitting material includes a first
metal halide formed of a halide of at least one metal
selected from the group consisting of sodium, scandium
10 and a rare earth element, and a second metal halide
formed of a halide of at least one metal selected from
the group consisting of zinc, magnesium, iron, cobalt,
chromium, nickel, manganese, aluminum, antimony,
beryllium, rhenium, gallium, titanium, zirconium and
15 hafnium.

8. A metal halide lamp according to claim 7,
wherein the metal halide includes a halide of at least
zinc.

9. A metal halide lamp according to claim 7,
20 wherein the raw material of the metal halide having
a water content not higher than 100 ppm is sealed in
the discharge container.

10. A metal halide lamp according to claim 9,
wherein a vacuum heat treatment is applied to the raw
25 material of the metal halide.

11. A metal halide lamp according to claim 9,
wherein a heat treatment is applied to the raw material

of the metal halide under an inert gas atmosphere.

12. A metal halide lamp according to claim 7, wherein the metal halide contains an excessively large amount of the metal component relative to the
5 stoichiometric amount.

13. A headlight apparatus for a vehicle, comprising:

the metal halide lamp according to any one of claims 1 to 12; and

10 a headlight apparatus body for a vehicle having the metal halide lamp arranged therein and having an optical axis extending in the longitudinal direction of the discharge container included in the metal halide lamp.

15 14. A method of manufacturing a metal halide lamp, comprising:

preparing a metal halide;

applying a vacuum heat treatment to the metal halide so as to obtain the raw material of the metal
20 halide having a water content not higher than 100 ppm;

sealing the raw material of the metal halide in a discharge container provided with a pair of electrodes so as to obtain a metal halide lamp; and

lighting the metal halide lamp, followed by
25 extinguishing the metal halide lamp so as to set the amount of water contained in the raw material of the metal halide in the extinguishing stage at 50 ppm or

less.

15. A method of manufacturing a metal halide lamp according to claim 14, wherein the vacuum heat treatment is carried out under a vacuum atmosphere not higher than 1×10^{-3} Pa and under the temperature falling within a range of between 300°C and 350°C.

16. A method of manufacturing a metal halide lamp, comprising:

preparing a metal halide;

10 applying a heat treatment to the metal halide under an inert gas atmosphere so as to obtain the raw material of the metal halide having a water content not higher than 100 ppm;

15 sealing the raw material of the metal halide in a discharge container provided with a pair of electrodes so as to obtain a metal halide lamp; and

20 lighting the metal halide lamp, followed by extinguishing the metal halide lamp so as to set the amount of water contained in the raw material of the metal halide in the extinguishing stage at 50 ppm or less.

25 17. A method of manufacturing a metal halide lamp according to claim 16, wherein the heat treatment under the inert gas atmosphere is carried out under an inert gas atmosphere of 1 kPa or less and under the temperature falling within a range of between 300°C and 350°C.

18. A method of manufacturing a metal halide lamp,

comprising:

preparing a metal halide;
sealing the metal halide in a discharge container
provided with a pair of electrodes, followed by
5 applying a heat treatment to the metal halide under
an inert gas atmosphere so as to obtain the raw
material of the metal halide having a water content
not higher than 100 ppm and subsequently sealing the
discharge container so as to obtain a metal halide
10 lamp; and

15 lighting the metal halide lamp, followed by
extinguishing the metal halide lamp so as to set the
amount of water contained in the raw material of the
metal halide in the extinguishing stage at 50 ppm or
less.

19. A method of manufacturing a metal halide lamp
according to claim 18, wherein the heat treatment under
the inert gas atmosphere is carried out under an inert
gas atmosphere of 1 kPa or less and under the tempera-
20 ture falling within a range of between 300°C and 400°C.